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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/707,470  
Filing Date: December 16, 2003  
Appellant(s): HOUGH ET AL.

\_\_\_\_\_  
George Macdonald  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 10/6/10 appealing from the Office action mailed 4/6/10.

**(1) Real Party in Interest**

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

**(2) Related Appeals and Interferences**

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal: 10/707470 has a prior decision from the Board of Patent Appeals and Interferences mailed on July 24, 2009. A copy is attached to the Appellants Brief.

**(3) Status of Claims**

The following is a list of claims that are rejected and pending in the application:

1-4, 6-8, 10-15 and 17-23.

**(4) Status of Amendments After Final**

The examiner has no comment on the Appellant's statement of the status of amendments after final rejection contained in the brief.

**(5) Summary of Claimed Subject Matter**

The examiner has no comment on the summary of claimed subject matter contained in the brief.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The examiner has no comment on the Appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except

for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

#### **(7) Claims Appendix**

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the Appellant's brief.

#### **(8) Evidence Relied Upon**

5589865	Beeson	12-1996
5457843	Gelardi	10-1995
6353233	Kikuchi	3-2002
4055029	Kalbow	10-1977
6529704	Kurita	3-2003

#### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***A) Claims 1-3, 7-8, 15, 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beeson (USPN 5589865) in view of Gelardi et al. (USPN 5457843).***

Beeson teaches a cleaning sheet comprising a substrate sheet (32) with a first and second surface (upper and lower surfaces) and a width and length (claims 1 and 2). The length is greater than the width (figure 6) (claim 1). The first surface of the sheet comprises a first (36) and second strip (34) of material (claim 1). The first and second strips have a first strip height (figure 3) and are orientated perpendicular to the feed path of the apparatus (col. 5, lines 56-58; states that the strips could be parallel to the page width). The first and second strips of material will

compress when drawn through a roller since they are both made from compliant materials (col. 5, lines 7-23) (claim 1). The first strip is separated from the second strip by a first distance (figure 2) (claim 1). The height of the strips is relatively large compared to the substrate thickness (figure 3) (claim 1). The strip height is more than double the height of the substrate (figure 3) (claim 8). The first strip of material comprises open cell foam (first strip 36 is made from an absorbent material which is inherently an open cell material) (claim 3). The substrate sheet has a leading edge handle (edge closest to 38 is considered the handle; any portion that can be gripped by a users hand can be considered a handle) (claim 7). The substrate sheet has approximately the planar dimensions of a letter-sized sheet of paper (col. 4, lines 65-67) (claim 8). At least one of the first and second strips have the shape of a rectangular prism (figure 3) (claim 15). The first strip has a width that is relatively narrow compared to the first distance (figure 4 and 6 shows that the first strip is narrower than the distance between the first and second strip) (claim 21).

Beeson teaches all the essential elements of the claimed invention however fails to teach that the first and second strips of material extend across the entire width of the substrate (claim 1). Beeson states that the strips (34, 36) substantially span the entire width of the substrate (20) (col. 5, lines 1-3). Gelardi teaches a substrate with a length and a width (figure 7). There are strips of material (31) that are positioned widthwise across the entire substrate. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Beeson's strips that substantially span the entire width with strips that fully span the entire width as suggested by Gelardi.

Beeson also fails to teach that the strips have the shape of a triangular prism (claim 18). Beeson's strips are rectangular in shape. It is well known to use triangular prisms to clean surfaces. For example, Gelardi teaches a cleaning sheet comprising triangular prisms (figure 1, 4 and 5) located on the top surface. It would have been obvious to at the time the invention was made to use a triangular prism as the shape of the cleaning strip on Beeson as taught by Gelardi since it is considered well known and further exemplified by Gelardi as a means for cleaning. Additionally, one of skill in the art would have expected Appellant's invention to perform equally well with either the rectangular or the triangular shape because both shapes perform the same function of cleaning optical sensors equally well.

***B. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beeson ('865) and Gelardi ('843) in view of Kikuchi et al. (USPN 6353233)***

Beeson teaches that the first strip of material is closer to the front edge of the substrate sheet than the second strip of material. Beeson however fails to teach that the second strip is made from an open cell foam material comprising brush bristles. Kikuchi teaches a cleaning sheet comprising bristles (3a). First, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the second strip from an open-cell foam, since it has been held within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious engineering choice. *In re Leshin*, 125 USPQ 416. Additionally, it would have been obvious to modify the second strip of Beeson with an open-cell foam since it is an obvious modification well known in the art to duplicate parts for a multiple effect. *In re Harza*, 124 USPQ 378, 380. Having both strips be open-cell foam would only enhance the cleaning capabilities of Beeson's invention. In addition

to modifying the material of the second strip, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the second strip so that it comprises bristles as taught by Kikuchi so that the bristles will aid in cleaning contaminants such as dust attached to the sensors (col. 4, lines 46-53).

***C. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beeson ('865) and Gelardi ('843).***

Beeson teaches all the essential elements of the claimed invention however fails to teach that the substrate has approximately the planar dimensions of a number 10 envelope. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Beeson's substrate to have dimensions approximately equal to a number 10 envelope since the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device. A device having the claimed relative dimensions would not perform differently than the prior art device, and therefore, the claimed device is not patentable distinct from the prior art device. MPEP 2144.04. Additionally, Beeson states that the cleaning apparatus could take on various dimensions (col. 4, line 67).

***D. Claims 10, 13-14, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beeson ('865).***

Beeson teaches all the essential elements of the claimed invention including that the first strip is narrow to allow the first strip to vertically decompress when exiting the roller nip (claim 10). Beeson however fails to teach that the first strip height is approximately twelve times the substrate thickness, that the first strip height is 0.75 inches, the first strip has a width of 0.5 inches and that the first distance is 2.5 inches. It would have been obvious to modify Beeson's

invention since the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device. A device having the claimed relative dimensions would not perform differently than the prior art device and therefore, the claimed device is not patentable distinct from the prior art device. MPEP 2144.

***E. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beeson ('865) in view of Gelardi ('843).***

Beeson teaches all the essential elements of the claimed invention however fails to teach that the substrate comprises a semi-rigid vinyl material or an ABS material that is approximately 0.0625 inches thick. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the substrate from a semi-rigid vinyl material or an ABS material, since it has been held within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious engineering choice. *In re Leshin*, 125 USPQ 416. Further, it would have been obvious to modify Beeson's substrate so that it is approximately 0.0625 inches thick since the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device. A device having the claimed relative dimensions would not perform differently than the prior art device and therefore, the claimed device is not patentable distinct from the prior art device. MPEP 2144.

***F. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beeson ('865) and Gelardi ('843) in view of Kalbow (USPN 4055029).***

Beeson teaches all the essential elements of the claimed invention however fails to teach that the rectangular first strip has a top surface with a notch. Kalbow teaches an open-cell foam



block comprising notches (12) in the top surface. It would have been obvious to one of skill in the art at the time the invention was made to modify the top surface of the first strip of Beeson with the notched top surface of Kalbow since the notches would allow the apparatus to clean more effectively (col. 1, lines 51-54). Additionally, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to notch a top surface of the first strip because Appellant has not disclosed that the notched surface provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Appellant's invention to perform equally well with either the claimed notched surface or the top surface as taught by Beeson because both top surfaces perform the same function of cleaning equally well. Therefore, it would have been obvious to one of ordinary skill in the art to modify Beeson to obtain the invention as specified in claim 19.

***G. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beeson ('865) in view of Gelardi ('843).***

Beeson teaches all the essential elements of the claimed invention however fails to teach that the rectangular first strip has a leading edge with an angled portion removed. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to remove an angled portion of the leading edge because Appellant has not disclosed that the angled edge provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Appellant's invention to perform equally well with either the claimed angled edge or the edge as taught by Beeson because both leading edges perform the same function of cleaning equally well. Therefore, it would have been obvious to one of ordinary skill in the art to modify Beeson to obtain the invention as specified in

claim 20. Additionally, regarding the shape of the cleaning strip, the court held that the shape or configuration of the claimed invention was a matter of choice, which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration or shape of the claimed strip was significant. *In re Dailey*, 149 USPQ 47.

***H. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beeson (USPN 5589865) in view of Gelardi ('843) and Kurita (USPN 6529704).***

Beeson teaches all the essential elements of the claimed invention however fails to teach having a third, fourth and fifth strip of material on the substrate. Kurita teaches a toner removing sheet that comprises a plurality of strips (p) that are located on a substrate (s1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Beeson so that there are at least five strips of material on the substrate as taught by Kurita to ensure a better cleaning of the optical sensors. More strips means higher chance of removing all debris from the machine optics on the first run through.

***I. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beeson (USPN 5589865) in view of Gelardi ('843).***

Beeson teaches all the essential elements of the claimed invention as stated above with regards to claim 1. Beeson however fails to teach that the first strip of material (36) comprises a lint-free, lead-free, non-abrasive, open-cell foam. Beeson's first strip of material (36) is an absorbent pad (implies open-cell) which has antistatic properties with low abrasive characteristics and is lint-free (col. 5, lines 21-24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the first strip of material (36) of Beeson so that it is completely non-abrasive and lead-free as required by the claim since

it has been held within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious engineering choice. *In re Leshin*, 125 USPQ 416. Further, using a material that is lead-free would help create a non-abrasive surface and would allow the cleaning pad to clean more efficiently. Additionally, it would have been obvious to modify the first strip of material so that is made from foam. The first strip of material is described in Beeson as an absorbent material and therefore making it from foam would not modify or alter the properties or function of the strip since foam is absorbent. Beeson further teaches using foam for the second strip of material (34; col. 5, lines 10-11)) and therefore since Beeson acknowledges the use of foam as a possible cleaning pad material, it would have been obvious to use an open cell foam for the first cleaning strip of material as well.

#### **(10) Response to Argument**

##### ***A. Claims 1-3, 7-8, 15, 18 and 21 are not unpatentable under 35 USC 103(a)***

*The Appellant argues that there is no discussion in Beeson for cleaning optical sensors and that using Beeson to clean optical sensors would not work for the intended purpose because the strips have short cleaning surfaces and would not extend to a sensor region. Therefore the felt pad of Beeson might not even compress through a roller nip as required by the present claim.*

The examiner would like to point out that the Appellant is not positively claiming a paper handling device with a roller nip or optical sensors. The Appellant is only providing a positive recitation of a cleaning apparatus for cleaning a paper handling device. Therefore, in response to Appellant's argument, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably

distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Therefore since Beeson in view of Gelardi teach the exact structure of the claim, it is clear that Beeson would be capable of cleaning a paper handling device and that the strips would vertically decompress when exiting the roller nip. Further, in response to the argument that neither the first nor second strips decompress, the reference's specification stated that the first strip (34) and the second strip are both "compliant" (col. 5, line 39). The specification goes on to further state that the first strip is made from a foam sponge. This clearly implies that the first strip is made from a material that will compress and decompress. The second strip (36) is made from an absorbent felt material (col. 5, lines 21-24). Felt is known to compress when pressure is applied and also return to the original shape after compression. In addition, the fact that it is absorbent would lead one of skill in the art to recognize that it is capable of compression/decompression. Figure 5 of Beeson further shows that the first and second strips are capable of compressing when passing thru the print head (10) (see compressed portion of element 34 on figure 5). Thus if the substrate was used in the environment as claimed (through a roller nip), it is clear that it would be capable of functioning in the manner intended by the claimed invention since Beeson teaches all the structural elements of the claim.

With regards to the height of the strips and whether the strips would even extend to a sensor region, the claims only states that the first strip height is relatively large compared to the substrate thickness. This is clearly shown in Beeson's figure 3 that the height of the strips is relatively large compared to the substrate thickness. Therefore, since there are no limitations directed to the optical sensor and how distant they are from the feed path or even any limitations

directed to what height the strips need to be in order to contact the optical sensor, there is no reason why the strips of Beeson do not read on the claim limitations.

*The Appellant also argues that the examiner has not established that Beeson teaches "lint-free, lead-free, non-abrasive, open cell foam" as stated in claim 5.*

In response, claim 5 is canceled and the examiner does not need to establish that Beeson teaches this limitation.

***B. Claim 4 is not unpatentable under 35 USC 103(a)***

*The Appellant argues claim 4 is patentable over the cited references for at least the reasons described with reference to claim 1.*

The Appellant's arguments fall or stand with independent claim 1.

*The Appellant states the recited configuration is advantageous to clean optical sensors relatively distant from the paper path and because Beeson describes only cleaning the relatively near print heads, the recited configuration is not obvious.*

In response, the Beeson reference teaches the configuration as claimed, where the first strip of material is closer to the front edge of the substrate sheet than the second strip of material. The obvious rejection was not made with regards to the configuration of the strips, but instead made for the material of the second strip. Thus the examiner relied on Kikuchi for the material teaching.

***C. Claim 6 is not unpatentable under 35 USC 103(a)***

*The Appellant argues claim 6 is patentable over the cited references for at least the reasons described with reference to claim 1.*

The Appellant's arguments fall or stand with independent claim 1.

***D. Claims 10, 13-14 and 17 are not unpatentable under 35 USC 103(a)***

*The Appellant argues claims 10, 13-14 and 17 are patentable over the cited references for at least the reasons described with reference to claim 1.*

The Appellant's arguments fall or stand with independent claim 1.

*The Appellant also argues that Beeson teaches away from using a relatively high strip height because it must clean print heads.*

In response, while it is clear that the reference does not state that the first strip is twelve times the substrate thickness, it would have been obvious to one of skill in the art to modify the size of the height of the strip since the only difference between the reference and the present invention is a recitation of relative dimensions. The device would not perform differently than the prior art device, if put in the same environment, and therefore one of skill in the art would have recognized the ability to modify the size of the strips. Further the size of the strips of Beeson is determined by the size of the gap and therefore, one of skill in the art would have found it obvious to modify the strips to any size necessary for various types of gaps in different environments.

***E. Claims 11-12 are not unpatentable under 35 USC 103(a)***

*The Appellant argues claims 11 and 12 are patentable over the cited references for at least the reasons described with reference to claim 1.*

The Appellant's arguments fall or stand with independent claim 1.

***F. Claim 19 is not unpatentable under 35 USC 103(a)***

*The Appellant argues claim 19 is patentable over the cited references for at least the reasons described with reference to claim 1.*

The Appellant's arguments fall or stand with independent claim 1.

***G. Claim 20 is not unpatentable under 35 USC 103(a)***

*The Appellant argues claim 20 is patentable over the cited references for at least the reasons described with reference to claim 1.*

The Appellant's arguments fall or stand with independent claim 1.

*The Appellant also argues that Beeson is not suitable for its intended purpose in a system having such a notched surface.*

In response, first, as stated above, if the prior art has all the structural elements of the claimed invention, then it would be capable of performing the intended function. Second, the Appellant is arguing the notched surface in claim 20, however there are no limitation directed to the notched surface in claim 20. The notched surface can be found in claim 19 and then the examiner recognizes that Beeson does not teach a notched surface and relies on Kalbow for this limitation.

***H. Claim 22 is not unpatentable under 35 USC 130 (a)***

*The Appellant argues claim 22 is patentable over the cited references for at least the reasons described with reference to claim 1.*

The Appellant's arguments fall or stand with independent claim 1.

*The Appellant argues that Gelardi does not teach strips that will decompress after passing through a roller.*

As stated above: the examiner would like to point out that the Appellant is not positively claiming a paper handling device with a roller nip or optical sensors. The Appellant is only providing a positive recitation of a cleaning apparatus for cleaning a paper handling device.

Therefore, in response to Appellant's argument, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Therefore since Beeson in view of Gelardi teach the exact structure of the claim, it is clear that Beeson would be capable of cleaning a paper handling device and that the strips would vertically decompress when exiting the roller nip. Further, in response to the argument that neither the first nor second strips decompress, the reference's specification stated that the first strip (34) and the second strip are both "compliant" (col. 5, line 39). The specification goes on to further state that the first strip is made from a foam sponge. This clearly implies that the first strip is made from a material that will compress and decompress. The second strip (36) is made from an absorbent felt material (col. 5, lines 21-24). Felt is known to compress when pressure is applied and also return to the original shape after compression. In addition, the fact that it is absorbent would lead one of skill in the art to recognize that it is capable of compression/decompression. Figure 5 of Beeson further shows that the first and second strips are capable of compressing when passing thru the print head (10) (see compressed portion of element 34 on figure 5). Thus if the substrate was used in the environment as claimed (through a roller nip), it is clear that it would be capable of functioning in the manner intended by the claimed invention since Beeson teaches all the structural elements of the claim.

With regards to the height of the strips and whether the strips would even extend to a sensor region, the claims only states that the first strip height is relatively large compared to the substrate thickness. This is clearly shown in Beeson's figure 3 that the height of the strips is



relatively large compared to the substrate thickness. Therefore, since there are no limitations directed to the optical sensor and how distant they are from the feed path or even any limitations directed to what height the strips need to be in order to contact the optical sensor, there is no reason why the strips of Beeson do not read on the claim limitations.

***I.. Claim 23 is not unpatentable under 35 USC 130 (a)***

*The Appellant argues that Beeson does not teach a lead-free, non-abrasive foam and that the secondary reference of Gelardi does not teach this deficiency.*

In response, the examiner acknowledges the fact that Beeson does not explicitly teach a lead-free, non-abrasive foam. The examiner is not relying on Gelardi for this teaching. Instead the Gelardi reference is used to teach that the strips of material extend across the entire width of the substrate surface. The examiner made an obvious-type rejection to modify Beeson so that the first strip of material is lead-free and non-abrasive since one of skill in the art would select a known material on the basis of suitability for the intended use as a matter of obvious engineering choice. A lead-free material will help create a non-abrasive surface and allow the cleaning pad to clean more efficiently without scratching or damaging the surface being cleaned.

*The Appellant also argues that there is not discussion in Beeson for cleaning optical sensors.*

In response, as stated above, the examiner would like to point out that the Appellant is not positively claiming a paper handling device with optical sensors. The Appellant is only providing a positive recitation of a cleaning apparatus *for* cleaning a paper handling device. Therefore, in response to Appellant's argument, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in

order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Therefore since Beeson in view of Gelardi teach the exact structure of the claim, it is clear that Beeson would be capable of cleaning a paper handling device with optical sensors.

**(11) Related Proceeding(s) Appendix**

Copies of the court or Board decision(s) identified in the Related Appeals and Interferences section of this examiner's answer are provided in the Appeal Brief.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Shay Karls

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